

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (canceled)

2. (canceled)

3. (currently amended) A circuit board, comprising:

~~The circuit board of claim 2, wherein the matrix material comprises a matrix material~~
comprising:

a first layer woven from a first set of fibers; and

a second layer woven from a second set of fibers; and

an optical fiber integrated with the matrix material; and

wherein the optical fiber is sandwiched between the first layer and the second layer

and is not woven into either the first or second layers.

4. (original) The circuit board of claim 3, wherein the optical fiber is part of an optical fiber pattern with a plurality of optical fibers and the optical fiber pattern is between the first layer and the second layer.

5. (original) The circuit board of claim 4, wherein the optical fibers in the optical fiber pattern have preselected locations within the optical fiber pattern.

6. (original) The circuit board of claim 5, wherein the optical fibers in the optical fiber pattern are in a grid pattern with preselected spacings between the optical fibers that make up the grid.

7. (currently amended) ~~The circuit board of claim 2,~~ A circuit board, comprising:

a matrix material;

optical fibers integrated with the matrix material; and

wherein:

the matrix material includes a layer with a plurality of woven structural fibers,
with a first woven structural fiber having a first orientation and a
second woven structural fiber having a second orientation about 90
degrees from the first orientation; and

the optical ~~fibers~~ fiber is woven with the structural fibers to form the layer,
wherein the optical fibers include a first optical fiber substantially
having the first orientation and a second optical fiber substantially
having the second orientation.

8. (currently amended) ~~The circuit board of claim 7,~~ A circuit board, comprising:

a matrix material;

an optical fiber integrated with the matrix material; and

wherein:

the matrix material includes a layer with a plurality of woven structural fibers;
the optical fiber is woven with the structural fibers to form the layer;
the layer with a plurality of woven structural fibers is a composite layer of
woven fiberglass bundles and resin; and
the optical fiber is woven into the layer as part of one of the bundles.

9. (currently amended) The circuit board of claim 8, wherein:

~~a plurality of the~~ woven fiberglass bundles each include an optical fiber within the bundle; and
the optical fibers within the bundles are substantially at a preselected location within the circuit board.

10. (canceled)

11. – 14. (canceled)

15. (original) A method to form a printed circuit board, comprising:

forming a stack that includes a first layer, a second layer, and a pattern of optical fibers between the first and second layers; and
curing the stack to form the printed circuit board, wherein the pattern of optical fibers are between the first and second layers in the circuit board.

16. (original) The method of claim 15, wherein the first and second layers are prepreg fiberglass layers.

17. (original) The method of claim 15, wherein the optical fibers in the pattern of optical fibers have preselected locations within the optical fiber pattern.

18. (original) The method of claim 17, wherein the optical fibers in the pattern of optical fibers have preselected locations within the pattern of optical fibers.

19. (original) The method of claim 18, wherein the optical fibers in the pattern of optical fibers are in a grid pattern with preselected spacings between the optical fibers that make up the grid.

20. (original) A method to form a printed circuit board, comprising:

forming a plurality of fiber bundles, each fiber bundle comprising structural fibers and
at least one of the plurality of fiber bundles further comprising an optical fiber;
weaving the plurality of fiber bundles into a structural fabric;
impregnating the structural fabric with resin; and
curing the impregnated structural fabric to form the printed circuit board.

21. (original) The method of claim 20, wherein:

each of the plurality of woven fiberglass bundles includes an optical fiber within the
bundle; and
the optical fibers within the bundles are substantially at a preselected location within
the circuit board.

22. (original) The method of claim 20, wherein:

the cured impregnated structural fabric is a first layer of the printed circuit board; and
the printed circuit board has a plurality of layers.

23. (original) The method of claim 22, further comprising:

forming a stack that includes the first layer, a second layer, and a pattern of optical
fibers between the first and second layers; and
curing the stack to form the printed circuit board, wherein the pattern of optical fibers
are between the first and second layers in the circuit board.

24. (new) The circuit board of claim 9, wherein the optical fibers within the bundles are
in a grid pattern.

25. (new) The method of claim 15, wherein the pattern of optical fibers between the first
and second layers are in a grid pattern.

26. (new) The method of claim 15, wherein the optical fibers in the pattern of optical
fibers between the first and second layers are not woven into a layer.